ABSTRACT OF THE DISCLOSURE

A sound compensation system alters an electrical audio signal for input to a sonic reproduction device having associated behavioral characteristics. The behavioral characteristics of the device are defined by individual or groups of individual components of the sonic reproduction device and include mechanical, acoustic and electromagnetic behaviors. The model includes a plurality of filters that simulate at least one of the behavioral characteristics of the sonic reproduction device. The filters are defined by digital signal processes or by analog circuits and are characterized by one or more of an associated frequency, time, phase and transient response. These responses combine to define an overall response for the model. The filters include adjustable parameters which are used to alter filter responses to produce responses that are conjugates to the responses of the unaltered filters and thus the sonic reproduction device. A controller modifies the parameters.